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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,819	09/17/2003	Kazuo Morita	20-133	4054

7590 08/15/2005

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EXAMINER	
LAVARIAS, ARNEL C	
ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,819	MORITA, KAZUO	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,10 and 12* is/are allowed.

6)☒ Claim(s) *1-3,5-9,11,13 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The replacement drawings were received on 6/13/05. These drawings are acceptable.

Response to Amendment

2. The amendments to the specification and abstract of the disclosure in the submission dated 6/13/05 are acknowledged and accepted. In view of these amendments, the objections to the specification in Sections 5-6 of the Office Action dated 2/24/05 are respectfully withdrawn.

3. The amendments to Claims 1, 4, 10-11 in the submission dated 6/13/05 are acknowledged and accepted.

4. The addition of Claims 13-14 in the submission dated 6/13/05 is acknowledged and accepted.

Response to Arguments

5. The Applicant's arguments with respect to the rejections of Claims 1-3, 5-9, 11 have been considered but are moot in view of the new ground(s) of rejection.

6. Claims 1-3, 5-9, 11, 13-14 are now rejected as follows.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 14 recites the limitation that both the first observation device and the second observation device are detachably mounted on the first and second connector, respectively. These limitations do not appear to be disclosed or supported by the specification or figures of the disclosure. It is also noted that though Figures 1 and 6 both show the first and second observation devices removed from their observation devices, it is clear from the disclosure that these are merely exploded views of the microscope system to provide clarity to the various elements in the microscope. The specification fails to explicitly disclose that these observation devices may also be detachable from their respective connectors.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka (U.S. Patent No. 5668661), of record, in view of Morita et al. (U.S. Patent No. 6333813), of record.

Tomioka discloses a stereoscopic microscope that enables a plurality of observers, including a first observer and a second observer to simultaneously observe substantially the same microscopic image of an object (See Figures 1-2, 5, 13, 17-18, 21), the stereoscopic microscope comprising a first observation device for use by the first observer (See for example 70a in Figure 13); a second observation device for use by a second observer (See for example 70b in Figure 13); a stereoscopic microscope body that includes an objective optical system and at least a pair of zoom optical systems (See for example 1, 10a, 10b, 10c, 10d, 40a, 70a, 70b in Figure 13); a first connector (See for example microscope body portions enclosing space 82a) that is positioned on the stereoscopic microscope body in the vicinity that the optical axis of the objective optical system intersects with the stereoscopic microscope body, the first connector for attaching the first observation device; and a second connector (See for example microscope body portion enclosing space 82b in Figure 13) that is installed on the stereoscopic microscope body at a position that is the same level as, or above, the position that the first connector is installed on the stereoscopic microscopic body; wherein the first connector is located at a position on the stereoscopic body, in relation to the optical axis of the objective optical system, that is closer to the objective optical system than is the position of the second connector. Tomioka additionally discloses the second observation device being attached to the stereomicroscope body at the second connector and has a rotation axis around

which the second observation device can be rotated, and the angle between the rotation axis of the observation optical system, in the region from the observed object to the microscope body, is 15 degrees or less (See 2 in Figure 13; the rotation axis of the second observation system is collinear with the optical axis of the objective optical system); the stereoscopic body further comprises a first leading optical system for dividing the two light fluxes that transmit through the pair of zoom optical systems into four light fluxes, the first leading optical system leading these four light fluxes toward the second connector (See for example 10a, 10b, 10c, 10d in Figure 13), the second observation device has an ocular system that includes two eyepiece lenses (See for example 72c, 72d in Figure 13); of the four light fluxes, two light fluxes are led by the ocular optical system to the eyepiece lenses; and by rotating the second observation device around the rotation axis, the two light fluxes that enter the ocular optical system may be switched to the other two of the four light fluxes (See col. 11, line 21-col. 13, line 65); the first connector has a contact surface that contacts the first observation device for attaching the first observation device to the microscope body, the contact surface having its surface normal inclined toward the first observer (See for example the vertical surface of the microscope body portion enclosing space 82b which contacts 81a in Figure 13); the second connector is positioned on the microscope body surface in a horizontal position from the first connector in a direction away from the first observer (See for example left side overhang of the microscope body portions enclosing space 82b, which contacts 81b in Figure 13); the stereoscopic microscope body further comprising a second leading optical system that includes a plurality of reflecting surfaces and which makes four light fluxes from the light

flux that transmits through the objective optical system, the second leading optical system leading these four light fluxes toward the second connector (See for example 10a, 10b, 10c, 10d, 78, 73c, various optics in 70a, various optics in 70b in Figure 13); the second observation device having an ocular optical system that includes two eyepiece lenses (See for example 72c, 72d in Figure 13); each of the four light fluxes is reflected an even number of times by the plurality of reflecting surfaces (Each of the four light fluxes appears to be reflected 8 times en route to each of the eyepiece lenses). Tomioka discloses the invention as set forth above, except for the microscope body having no more than a pair of zoom optical systems. However, Morita et al. teaches a conventional stereomicroscope system (See for example Figures 4-5) which utilizes a first observation device for a first observer and a second observation device for a second observer (See 108, 109, 120 in Figures 4-5). In addition, the first and second observation devices share one or a pair of zoom optical systems (See 106 in Figure 4; 121 in Figure 5). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the microscope body of Tomioka have no more than a pair of zoom optical systems, as taught by Morita et al., for the purpose of simplifying the optical design of the stereomicroscope, as well as make the stereomicroscope more compact.

11. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka in view of Morita et al. as applied to Claims 1-2 above, and further in view of Fujiwara (U.S. Patent No. 4798451), of record.

Tomioka in view of Morita et al. discloses the invention as set forth above in Claims 1-2, except for the second observation device including a rotatable part having a rotation

axis, the angle between the rotation axis and the optical axis of the objective optical system in a region between the observed object and the microscope body is in a range of 35-55 degrees, the second observation device being constructed so that two of the four light fluxes enter within the rotatable part and the light fluxes that enter within the rotatable part are selected by rotation of the rotatable part around the rotation axis. However, Fujiwara teaches a binocular tube for a conventional microscope system (See for example Figures 1-9), wherein the ocular tube units (See 28 in Figure 8) are rotatable about a first axis (This axis would be denoted by the optical axis of the light traversing the connector between 27 and 28 near the region denoted 27 in Figures 6, 8), and the movable tube unit connecting to the ocular tube units is rotatable about a second axis (This axis is denoted by 'O' in Figure 6). The axis formed by the main imaging lenses (i.e. the objective lens) is denoted by the light ray traversing through 21 in Figures 6, 8. It is noted that the angle of rotation about 'O' is variable, and that, although not specified, one of ordinary skill would have been able to restrict the angular movement about 'O' to any particular range, such that the angle formed between the axis formed by the main imaging lenses and the axis formed by the rotation of the ocular tube units may lie in any particular angular range, such as the recited 35-55 degrees. In doing so, the pair of light fluxes selected by the rotation of the second observation device would, in any case, similarly be selected to pass through the rotatable part of the second observation device and traverse toward the ocular optical system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second observation device of the microscope of Tomioka in view of Morita et al. include a

rotatable part having a rotation axis, the angle between the rotation axis and the optical axis of the objective optical system in a region between the observed object and the microscope body is in a range of 35-55 degrees, the second observation device being constructed so that two of the four light fluxes enter within the rotatable part and the light fluxes that enter within the rotatable part are selected by rotation of the rotatable part around the rotation axis, as taught by Fujiwara, to provide easier user access to the ocular optical system during viewing.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka in view of Morita et al. as applied to Claims 1-3 above, and further in view of Taira (U.S. Patent No. 4412727), of record.

Tomioka in view of Morita et al. discloses the invention as set forth above in Claims 1-3. Tomioka additionally discloses the ocular optical system in an ocular tube including a single image rotator, a pair of eyepiece optical systems which include the eyepiece lenses (See 81b, 72c, 72d; deflecting element in 81b near 72c, 72d in Figure 13). However, Tomioka in view of Morita et al. lacks a pair of relay optical systems, a pair of image formation optical systems, the second observation device including an intermediate tube which houses the pair of relay optical systems and the single image rotator, the intermediate tube connecting to the second connector at one end and rotatably connected to the ocular tube at the other end; the two light fluxes passing through the pair of relay optical systems housed by the intermediate tube transmitting through the image rotator; and the image rotator rotating by ½ the amount of rotation of the ocular tube. However, the use of such housings and optical elements are well known and conventional

in microscopic optical devices, including both non-stereoscopic and stereoscopic microscope devices. For example, Morita et al. additionally teaches a conventional stereoscopic microscope (See for example Figure 3), the microscope including conventional housings and optics, such as an intermediate tube housing a pair of relay optical systems (See for example 22, 18, housing enclosing 21, 22 in Figure 3), each relay optical system having an exit axis that is substantially parallel to the exit axis of the other relay optical system, the ocular tube including a pair of image formation optical systems (See for example lenses near 24 in Figure 3), the intermediate optical tube having a connecting portion that may be connected to the microscope body at one end (See 17, region near 19 in Figure 3) and is connected to the ocular tube at the other end; and two light fluxes, instead of a single light flux, passing through the pair of relay optical systems housed in the intermediate tube transmitting through the image rotator (See for example 20 in Figure 3). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the microscope of Tomioka in view of Morita et al. include a pair of relay optical systems, a pair of image formation optical systems, the second observation device including an intermediate tube which houses the pair of relay optical systems and the single image rotator, the intermediate tube connecting to the second connector at one end and rotatably connected to the ocular tube at the other end; and the two light fluxes passing through the pair of relay optical systems housed by the intermediate tube transmitting through the image rotator, as additionally taught by Morita et al., for the purpose of protecting the various optical components while allowing for efficient light routing for simultaneous stereo

viewing of images during viewing. The combined teachings of Tomioka and Morita et al. lack the image rotator rotating by ½ the amount of rotation of the ocular tube. However, Taira teaches an observation device that is used by attaching it to the body of a microscope, the observation device comprising an image rotator (See 15 in Figure 2); an ocular tube that is rotatable and houses a pair of eyepiece optical systems (See 25, 24a, 24b in Figure 2), wherein the image rotator is made to rotate by ½ the amount of the rotation of the ocular tube (See col. 2, line 4-col. 3, line 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the microscope of Tomioka in view of Morita et al. further have the image rotator rotate by ½ the amount of rotation of the ocular tube, as taught by Taira, for the purpose of providing a good, erect observation image over a variable tilt angle without the use of bulky, large-sized reflecting mirrors.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taira in view of Morita et al.

Taira discloses an observation device that is used by attaching it to the body of a microscope, the observation device comprising an image rotator (See 15 in Figure 2); a relay optical system (See 13 in Figure 2); an ocular tube that is rotatable and houses a pair of eyepiece optical systems (See 25, 24a, 24b in Figure 2), wherein the image rotator is made to rotate by ½ the amount of the rotation of the ocular tube (See col. 2, line 4-col. 3, line 6), the rotation being about an axis that is parallel to an exit optical axis of the relay optical system (See 13, 15 in Figure 2). Taira lacks the device being usable in a stereomicroscope such that an intermediate optical tube houses a pair of relay optical

systems, each relay optical system having an exit axis that is substantially parallel to the exit axis of the other relay optical system, the ocular tube including a pair of image formation optical systems, the intermediate optical tube having a connecting portion that may be connected to the microscope body at one end and is connected to the ocular tube at the other end; and two light fluxes, instead of a single light flux, passing through the pair of relay optical systems housed in the intermediate tube transmitting through the image rotator. However, the use of such housings and optical elements are well known and conventional in microscopic optical devices, including both non-stereoscopic and stereoscopic microscope devices. For example, Morita et al. teaches a conventional stereoscopic microscope (See for example Figure 3), the microscope including conventional housings and optics, such as an intermediate optical tube housing a pair of relay optical systems (See for example 22, 18, housing enclosing 21, 22 in Figure 3), each relay optical system having an exit axis that is substantially parallel to the exit axis of the other relay optical system, the ocular tube including a pair of image formation optical systems (See for example lenses near 24 in Figure 3), the intermediate optical tube having a connecting portion that may be connected to the microscope body at one end (See 17, region near 19 in Figure 3) and is connected to the ocular tube at the other end; and two light fluxes, instead of a single light flux, passing through the pair of relay optical systems housed in the intermediate tube transmitting through the image rotator (See for example 20 in Figure 3). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the device of Taira be usable in a stereomicroscope such that an intermediate optical tube houses a pair of relay

optical systems, each relay optical system having an exit axis that is substantially parallel to the exit axis of the other relay optical system, the ocular tube including a pair of image formation optical systems, the intermediate optical tube having a connecting portion that may be connected to the microscope body at one end and is connected to the ocular tube at the other end; and two light fluxes, instead of a single light flux, passing through the pair of relay optical systems housed in the intermediate tube transmitting through the image rotator, as taught by Morita et al., for the purpose of protecting the various optical components while allowing for efficient light routing for simultaneous stereo viewing of images during viewing and/or observation.

14. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka in view of Lang et al. (U.S. Patent No. 4605287).

Tomioka discloses a stereoscopic microscope that enables a plurality of observers, including a first observer and a second observer to simultaneously observe substantially the same microscopic image of an object (See Figures 1-2, 5, 13, 17-18, 21), the stereoscopic microscope comprising a first observation device for use by the first observer (See for example 70a in Figure 13); a second observation device for use by a second observer (See for example 70b in Figure 13); a stereoscopic microscope body that includes an objective optical system and a pair of zoom optical systems (See for example 1, 10a, 10b, 10c, 10d, 40a, 70a, 70b in Figure 13); a first connector (See for example microscope body portions enclosing space 82a) that is positioned on the stereoscopic microscope body in the vicinity that the optical axis of the objective optical system intersects with the stereoscopic microscope body, the first connector for attaching the

first observation device; and a second connector (See for example microscope body portion enclosing space 82b in Figure 13) that is installed on the stereoscopic microscope body at a position that is the same level as, or above, the position that the first connector is installed on the stereoscopic microscopic body; wherein the first connector is located at a position on the stereoscopic body, in relation to the optical axis of the objective optical system, that is closer to the objective optical system than is the position of the second connector. Additionally, Tomioka discloses the first observation device being detachably and rotatably mounted on the first connector, and the second observation device being detachably and rotatably mounted on the second connector (See Abstract; Figure 13). Tomioka lacks the second connector being arranged on a surface of the microscope body separate from the first connector. However, Lang et al. teaches a conventional surgical microscope which may be used by two surgeons (See Abstract; Figures 1-2), wherein a first observation device is rotatably and detachably mounted on a first connector (See 4, 9 in Figures 1-2) and a second observation device is rotatably and detachably mounted on a second connector (See 4', 11 in Figures 1-2), and the second connector is arranged on a surface of the microscope body separate from the first connector. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second connector be arranged on a surface of the microscope body separate from the first connector, as taught by Lang et al., in the microscope of Tomioka, to allow for more convenient placement of the observation device and the observer during microscope use, while continuing to allow for various viewing angles of the observation device.

Allowable Subject Matter

15. Claims 4, 10, and 12 are allowed.

16. The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a stereoscopic microscope, as generally set forth in Claim 4, the microscope including, in combination with the limitations set forth in Claim 4, a pupil splitter unit for splitting a light flux into two light fluxes being provided near a location conjugate with the exit pupil of one of the pair of zoom optical systems.

Claim 10 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a stereoscopic microscope, as generally set forth in Claim 10, the microscope including, in combination with the limitations set forth in Claim 10, the ocular tube being extendible from, and collapsible into, the intermediate tube over a range of movement in a direction of the exit optical axes of the pair of relay optical systems, and the exit pupils of the pair of relay optical systems being arranged near a middle position of the range of extending and collapsing movement of the ocular tube.

Claim 12 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest an observation device that is used by attaching it to the body of a stereoscopic microscope, as generally set forth in Claim 12, the observation device including, in combination with the limitations set forth in Claim 12, the ocular tube being extendible from, and collapsible into, the intermediate tube over

a range of movement in a direction of the exit optical axes of the pair of relay optical systems, and the exit pupils of the pair of relay optical systems being arranged near a middle position of the range of movement of the ocular tube.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arnel C. Lavarias
8/11/05

THONG NGUYEN
PRIMARY EXAMINER
GROUP 2800

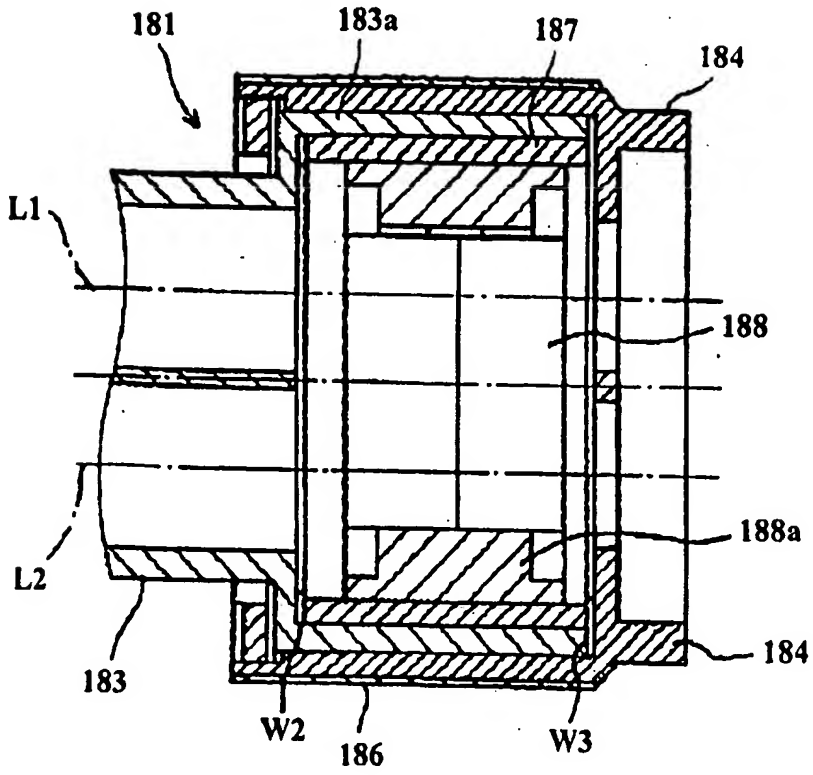

Fig. 22(a)
(Prior Art)

Drawing Changes Approved
8/10/05

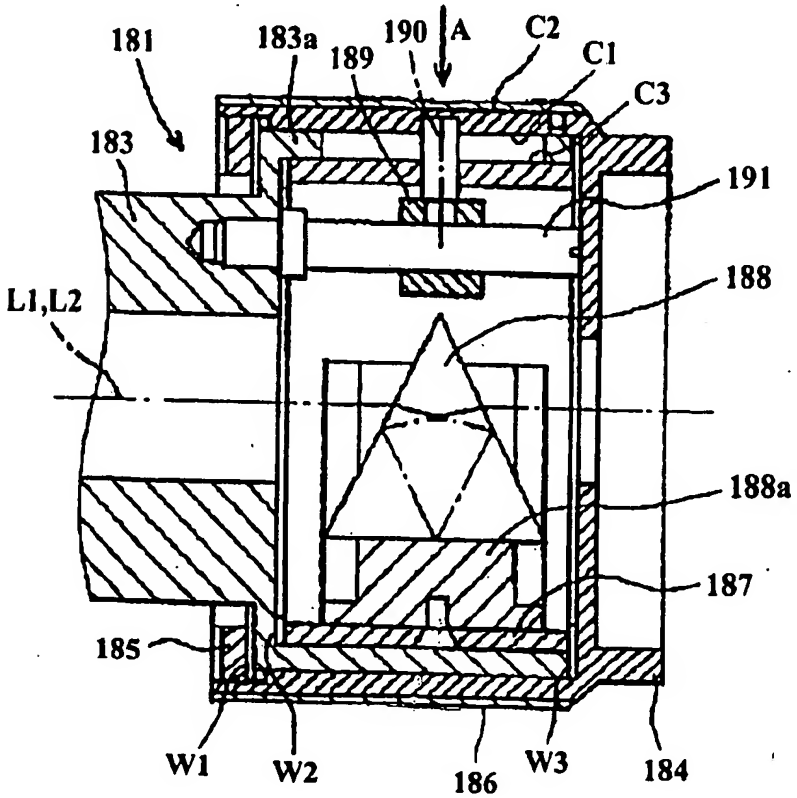

Fig. 22(b)
(Prior Art)